

### REMARKS

Applicants amended claims 1, 14, and 30; cancelled claim 28; and withdrew claims 37-53. The amendments are explained further below. Claims 1-27 and 29-36 are presented for examination.

Support for the claim amendments can be found, for example, in claim 28 as originally filed, on page 3, lines 16-29 of the specification, and in FIG. 1, reproduced below:

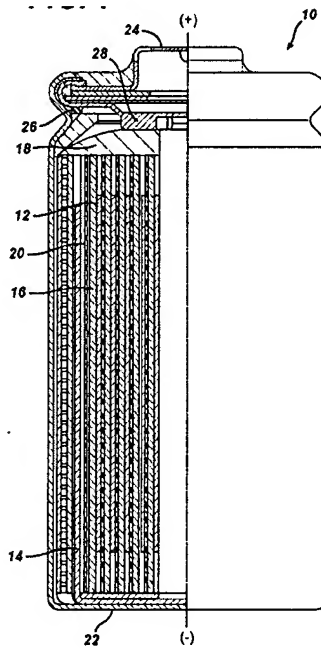


FIG. 1.

FIG. 1 shows a lithium battery including a cylindrical housing 22 having a first end (e.g., the positive terminal) and a second end (e.g., a negative terminal), and having a continuous external wall defining an opening at the first end and enclosing the second end. An anode 12, cathode 16, and a separator 20 are within battery housing 22. (See, e.g., application, FIG. 1 and page 3, lines 18-19). The cathode includes a current collector having an exposed end which can form a crown 18 within the housing, the crown is in contact with a positive lead 28 (See, e.g., *id.*, FIG. 1 and page 3, lines 22-23). A positive external contact 24 contacts the positive lead 28 and closes the opening defined by the external wall at the end of housing 22. (See, e.g., *id.*, FIG. 1, page 3, lines 20-22).

This exploded perspective view shows the assembly of the container. It includes a lid (2) with a central opening (54) and a central protrusion (51). A gasket (55) is positioned between the lid and the base. The base (4) is a cylindrical component with a central opening (56) and a central protrusion (51). The base is supported by a base plate (7) which has a central opening (54) and a central protrusion (51). The base plate is secured by a screw (81) passing through a hole (55) in the base plate and a hole (56) in the base, and a nut (5) at the bottom. The base plate is also secured by a screw (54) passing through a hole (54) in the base plate and a hole (56) in the base, and a nut (5) at the bottom.

FIG. 2. (See, e.g., Nakanishi, FIG. 2).

Nakanishi's secondary battery has openings at both ends, defined by a cylindrical wall of housing 1, to which lids 2, 2 are welded onto. Terminal assemblies 5, 5 seal the holes in lids 2, 2 of the battery. Positive terminal 5 has an electrode terminal 51, which includes a screw member extending through a hole in lid 2, a first nut 55 and a second nut 56 which screw onto the screw member. Nut 55 is tightened to clamp the terminal 51 to seal off the hole. (See, e.g., Nakanishi, FIGS. 1 and 2; col. 4, lines 50-61; and col. 5, line 8-21.) Similarly, negative terminal 5 has a negative electrode terminal 81, which is assembled in an analogous manner to terminal 51. (See, e.g., id., col. 5, lines 28-32). Therefore, Nakanishi does not disclose or suggest a housing having a continuous external wall defining an opening at the first end and enclosing the second end, as required by claims 1-13, 18-23, 25-27, and 29. The openings defined by the housing wall of Nakanishi's battery are not closed by a positive external contact in contact with a positive lead. Instead, Nakanishi's openings at the top and bottom of his battery are closed by lids 2, 2 in combination with terminals 5, 5.

Applicants discovered that including an aluminum-aluminum contact between a cathode current collector and a positive lead provides a more robust connection than an aluminum-stainless steel contact; and that such an aluminum-aluminum contact can result in a battery having an impedance that increases by less than 0.20 Ohms after the battery is dropped six times from a height of one meter onto a hard surface, as required by claims 1-13, 18-23, 25-27, and 29. (See, e.g., application, page 10, lines 11-13; and pages 12-14, Examples 4 and 5). Nakanishi does not disclose or suggest such batteries. Instead, Nakanishi discloses batteries having electrode terminals that could be tightened with sufficient torque to decrease leakage. (See, e.g., Nakanishi, col. 2, lines 38-41, and col. 6, line 37- col. 7, line 33).

A person having ordinary skill in the art would also not have been motivated to modify Nakanishi's battery to arrive at the batteries covered by the claims, as Nakanishi's battery construction works well for its intended purpose. Nakanishi's battery has a much different structure. Moreover, Nakanishi discloses that negative electrode 81, and positive electrode terminal 51 which has improved strength and can be tightened up with sufficiently great torque, decrease the incidence of leakage and retain a satisfactory sealing effect. (See, e.g., id.)

Therefore, Nakanishi does not disclose or suggest the subject matter covered claims 1-13, 18-23, 25-27, and 29, and there is no motivation to modify Nakanishi's battery to arrive at the

subject matter of the claims. Thus, Applicants respectfully request that the rejection of claims 1-13, 18-23, 25-27, and 29 under 35 U.S.C. §102(e) and/or 35 U.S.C. § 103 (a) be reconsidered and withdrawn.

Furthermore, claims 18-20 cover batteries having positive leads including one or more extensions, and are patentable over Nakanishi, at least because Nakanishi does not disclose or suggest such batteries. Applicants request that the rejection of claims 18-20 be withdrawn for this additional reason.

The Examiner rejected claims 14-17 and 30-36 under 35 U.S.C. 103(a) as being unpatentable over Nakanishi in view of Corrosion Science, Vol. 26, No. 5, pp. 371-375, 1986 ("Tischer"). Dependent claims 14-17 and claims 30-36 are patentable for at least the same reasons that claim 1 is patentable. The secondary reference relied on by the Examiner in rejecting claims 14-17 and 30-36 does not cure the deficiencies of Nakanishi, at least because Tischer does not disclose or suggest a housing having a continuous external wall defining an opening at a first end of the battery and enclosing the second end, or closing this opening by a positive external contact in contact with a positive lead, where the battery has an impedance that increases by less than 0.20 Ohms after the battery is dropped six times from a height of one meter onto a hard surface, as required by claims 14-17 and 30-36. Instead, Tischer discloses an aluminum-silicon carbide composite for use in high temperature sodium-sulfur batteries. (See, e.g., Tischer, page 377, Introduction). Therefore, Applicants respectfully request that the rejection of claims 14-17 and 30-36 under 35 U.S.C. § 103(a) be reconsidered and withdrawn.

The Examiner rejected claim 24 under 35 U.S.C. § 103(a) as being unpatentable over Nakanishi in view of U.S. Publication No. 2003/0031933 ("Shembel"). Claim 24 depends from claim 1, and is patentable for at least the same reasons that claim 1 is patentable. The secondary reference relied on by the Examiner in rejecting claim 24 fails to cure Nakanishi's deficiencies, at least because Shembel does not disclose or suggest a housing having a continuous external wall defining an opening at the first end of the battery, or closing this opening by a positive external contact in contact with a positive lead, where the battery has an impedance that increases by less than 0.20 Ohms after the battery is dropped six times from a height of one meter onto a hard surface, as required by claim 24. Instead, Shembel generally discloses solid polymer electrolytes. (See, e.g., Shembel, Abstract).

A person having ordinary skill in the art would also not look to Shembel for motivation to modify Nakanishi to arrive at the subject matter covered by the claim, as Shembel discloses that solid polymer electrolytes make it possible make a battery that uses a soft outer case such as a metal plastic laminate bag, resulting in improvement in weight and thickness, when compared to liquid electrolyte can-type Li batteries; and that rigid hermetically sealed metal "cans" can reduce energy density. (See, e.g., Shembel, page 1, [007] and [0012]).

Thus, neither Nakanishi nor Shembel disclose or suggest the subject matter covered by claim 24, a person having ordinary skill in the art would not have been motivated to combine Nakanishi with Shembel to arrive at the subject matter covered by claim 24, and even if such a person were somehow motivated to combine Nakanishi and Shembel, the result would still be different from the subject matter of claim 24. Therefore, Applicants respectfully request that the rejection of claim 24 under 35 U.S.C. § 103(a) be reconsidered and withdrawn.

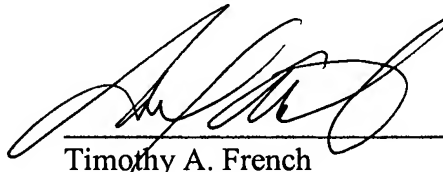
Applicants believe the application is in condition for allowance, which action is requested.

Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

Date: \_\_\_\_\_

July 5, 2007



\_\_\_\_\_  
Timothy A. French  
Reg. No. 30,175

Fish & Richardson P.C.  
225 Franklin Street  
Boston, MA 02110  
Telephone: (617) 542-5070  
Facsimile: (617) 542-8906